

REMARKS

In the 4 November 2009 *Office Action*, the Examiner allows Claims 1-7 and 13-20 and rejects Claims 8-12, 21, and 22. Applicant thanks the Examiner for the careful consideration and examination and for allowance of Claims 1-7 and 13-20. No new matter is believed to be introduced by this submission as at least ¶¶ 109-122 and Figures 8-15 support the clarifying amendments (citations made to the published application – US 2008/0021368).

Applicant submits this Response solely to facilitate prosecution. Applicant reserves the right to present new or additional claims in this Application that have similar or broader scope as originally-filed. Applicant also reserves the right to present additional claims in a later-filed application that have similar or broader scope as originally-filed. Any amendment, argument, or claim cancellation is not to be construed as abandonment or disclaimer of subject matter.

Upon entry of this Response, Claims 1-22 remain pending. It is respectfully submitted that the present Application is in condition for allowance for at least the following reasons.

I. Summary of Telephonic Interview on 9 November 2009

On 9 November 2009, the Examiner and the undersigned spoke about the 4 November 2009 Office Action and the outstanding claim rejections. As described in the Examiner's 18 November 2009 Interview Summary, potential amendments to Claims 8 and 22 were discussed. Applicant implements certain of the discussed claim amendments in this response and as a result believes all pending claims are allowable. If for any reason the Examiner believes this interview summary deficient, it is respectfully requested that the Examiner contact the undersigned so that this interview summary can be supplemented.

I. Claim 22 Is Patentable Under 35 U.S.C. § 112

The Examiner rejects Claim 22 under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite. Applicant amends Claim 22 to address the Examiner's concern as the claim now recites flowing a fluid through the claimed device. Withdrawal of the rejection to Claim 22 is respectfully requested.

II. Claims 8-12 & 21 Are Patentable Under 35 U.S.C. § 103

The Examiner rejects Claims 8-12 and 21, and 21 under 35 U.S.C. § 103(a) as allegedly being unpatentable. Claims 8-11 and 21 are rejected due to Backlund, and Claim 12 is rejected due to a combination of Backlund and Dubrow. (US 2005/0221072). Applicant respectfully traverses the § 103 rejection in light of the clarifying amendments.

Applicants have clarified independent Claims 8 and 21 to include features not taught in Backlund. These features include structural features that enable the claimed devices to combine liquid flows in a manner that provides low flow disturbance and combines incoming flows in a substantially parallel fashion for provision to an outlet. Embodiments of such features are shown in Applicant's Figures 8 and 9. Claims 8 and 21 now recite the following features that are believed not taught or fairly suggested in Backlund.

Claim 8

- “a first outlet chamber, in liquid communication with the first outlet, sized and shape to receive a portion of the first liquid flow and a portion of the second liquid flow and merge the flows in a substantially parallel fashion for provision to the first outlet”
- “a second outlet chamber, in liquid communication with the second outlet, sized and shape to receive a portion of the first liquid flow and a portion of the second liquid flow and merge the flows in a substantially parallel fashion for provision to the second outlet”

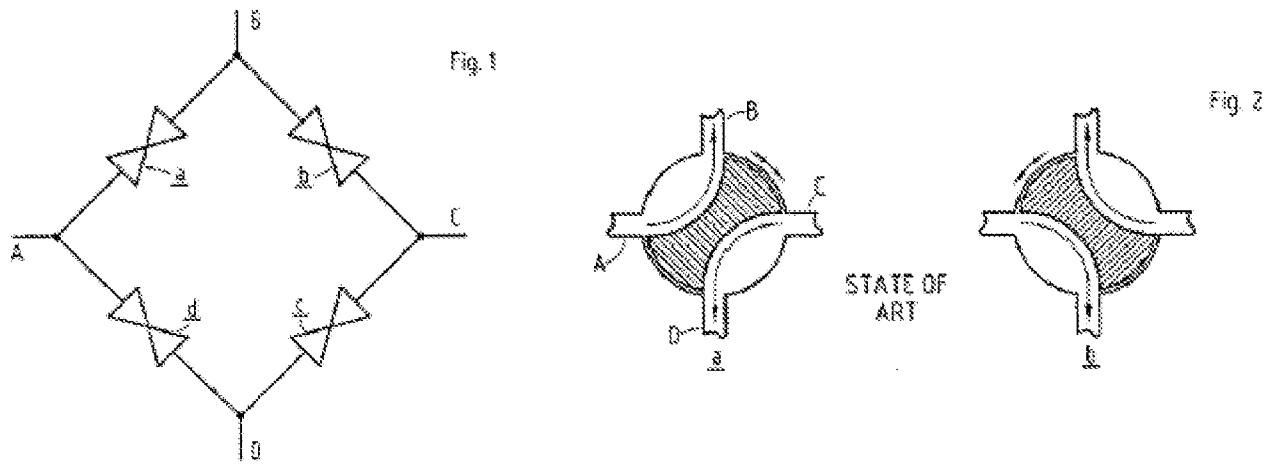
Claim 21

- “a first outlet chamber having opposing curved features that combine the IVC and SVC flows and enable the combined IVC-SVC flows to commonly exit the first lung outlet”
- “a second outlet chamber having opposing curved features that combine the IVC and SVC flows and enable the combined IVC-SVC flows to commonly exit the second lung outlet”

Backlund's description of his device confirms that he fails to teach or suggest the above features. Backlund discloses a device with two inlets (A and C) and two outlets (B and D). Backlund's device, shown schematically in Fig. 1, is specifically designed to perform like the arrangement in Backlund's FIG. 2 (shown below). Backlund's device is only capable of allowing flow in through A and out through B at the same time as allowing flow in through C

and out through D. When Backlund's device operates valves A and C are open to allow flow while valves B and D are closed to block flow. Backlund's device can also allow flow in through A and out through D at the same time as allowing flow in through C and out through B. When Backlund's device allows flow through valves B and D, valves A and C are closed.

Given the operation of Backlund's device, it fails to disclose the device claimed in Claims 8 and 21. In particular, Backlund does not disclose a device that splits a first flow and a second flow into a first branch and a second branch. Backlund also fails to disclose merging the first branches and the second branches of the first and second inlet flows together, such that the flows of the first branches and/or the second branches are substantially parallel at the sight of merging, as Applicant also claims. Backlund's device also lacks the above-mentioned structural features enabling the combined flows to be substantially parallel. Still yet, Backlund does not teach or suggest the claimed opposing curved wall features and his device is not sized and shaped to enable flow merger in a substantially parallel fashion. Backlund fails to disclose, teach, or fairly suggest Applicants' claimed features.



Backlund also teaches away from the parallel merging of branches and corresponding structure as claimed by Applicant. Backlund's **branches are not disclosed to be parallel at the site of merging**. Even if Backlund's device is capable of merging, his Fig. 5 depicting his device confirms that his branches (and flow within the branches) merge anti-parallel to each other. The anti-parallel merging would, therefore, teach away from the parallel merging claimed by Applicant. Because Bäcklund's device teaches away from Applicant's claimed invention, it would not have been obvious to modify Bäcklund's device to obtain Applicant's claimed invention. Thus, there can be now *prima facie* case of obviousness due to such teaching away.

There are also significant disadvantages to merging two inlet flows anti-parallel to each other. The disadvantages are the resulting turbulence at the site of anti-parallel merging and the loss of momentum of the inlet flows. If Backlund's device were used for cardiovascular applications, the turbulence and loss of momentum would increase the amount of work that must be performed by the heart to pump blood through the Backlund valve; thus, a heart would wear out much faster than with a device producing little turbulence or loss of momentum, such as a device that merges flows parallel to each other, as Applicant claims. Backlund's valves and narrow orifices would likely yield blood damage due to its rough transitions in geometry shape from the inlets to the outlets.

For at least the reasons stated above, Applicant respectfully submits that the pending claims are patentably distinct from the cited references. Applicant, therefore, respectfully requests that the Examiner withdraw the rejection to these claims.

III. Fees and Express RCE Request and Petition for Time Extension

Applicant believes no claims fees are due, as the total number of Claims, and independent Claims, is equal to the number of Claims paid for upon filing this Application.

Applicant petitions for a two-month extension of time under 37 C.F.R. § 1.136 and requests continued examination under 37 C.F.R. § 1.114. Applicant submits the RCE and extension fees via EFS-Web.

No other fees are believed due. Authorization to charge Deposit Account No. 20-1507, however, is given herein should additional fees be due.

IV. Conclusion

This *Response* is believed to be a complete response to the 4 November 2009 *Office Action*. Applicant respectfully asserts that the pending claims are in condition for allowance and respectfully requests passing of this case in due course of patent office business. If the Examiner believes there are other issues that can be resolved by a telephone interview, or there are any informalities remaining in the application which may be corrected by an Examiner's amendment, a telephone call to Hunter Yancey at (404) 885-3696 is respectfully requested.

Respectfully submitted,
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